

REMARKS

This Amendment responds to the Final Office Action mailed May 13, 2008 in the above-identified application. The foregoing amendments do not raise new issues or require extensive consideration. Accordingly, entry of the Amendment and allowance of the application are respectfully requested.

Claims 1-40, 42 and 44-52 were previously pending in the application. By this Amendment, claims 1, 10-13, 19, 23, 28-30 and 36 are amended. Claims 48-52 are canceled without prejudice of disclaimer. Accordingly, claims 1-40, 42 and 44-47 are currently pending, with claims 1, 23 and 40 being independent claims. The Amendments find clear support in the original application at least at page 4, lines 7-17 and page 15, line 11 to page 16, line 14. No new matter has been added.

The Examiner has rejected claims 1, 3, 7-13, 23, 25-30, 35 and 48-52 under 35 U.S.C. §103(a) as unpatentable over Shinomiya, et al. (U.S. 2003/0185148) in view of Saleh et al. (U.S. 6,801,496). Claims 2 and 24 are rejected under 35 U.S.C. §103(a) and unpatentable over Shinomiya, et al. in view of Saleh, et al. as applied to claim 1, further in view of Fortuna (U.S. 6,778,833). Claim 4 is rejected under 35 U.S.C. §103(a) as unpatentable over Shinomiya, et al. in view of Saleh, et al. as applied to claim 3, further in view of Lotter, et al. (U.S. 7,218,645). Claim 5 is rejected under 35 U.S.C. §103(a) as unpatentable over Shinomiya, et al. in view of Saleh, et al. as applied to claim 1, further in view of Rabie, et al. (U.S. 7,092,356). Claims 14 and 31 are rejected under 35 U.S.C. §103(a) as unpatentable over Shinomiya, et al. in view of Saleh, et al. as applied to claim 1, further in view Havansi (U.S. 5,905,714). Claims 15 and 32 are rejected under 35 U.S.C. §103(a) as unpatentable over Shinomiya, et al. in view of Saleh, et al. as applied to claim 1, further in view Greaves, et al. (U.S. 6,396,815). Claims 16 and 33 are rejected under 35 U.S.C. §103(a) as unpatentable over Shinomiya, et al. in view of Saleh, et al. as applied to claim 1, further in view of Liu, et al. (U.S. 2005/0068954). Claims 17, 19-22 and 36-39 are rejected under 35 U.S.C. §103(a) as unpatentable over Shinomiya, et al. in view of Saleh, et al. and Liu, et al. as applied to claim 16, further in view of Izmailov, et al. (U.S. 2005/0015511). Claims 40, 42 and 44-47 are allowed. Claims 6, 18 and 34 apparently are allowable if written in independent form. The rejections are respectfully traversed in view of the amended claims.

Shinomiya discloses a spare path design method for a communication network in which spare path information is set in advance in each node of the communication network. A fault notification message including fault location information is transferred from a fault detection node to each node in the event of a link or a node fault (§0014).

Saleh discloses a protocol for configuring routes over a network (col. 1, lines 34-36). The time and resources required to restore a failed circuit in an optical network are reduced by partitioning the nodes of the optical network into zones (col. 2, lines 13-16). Each node in a network employing the protocol is assigned a globally unique address, such as a node ID which includes a zone ID and a node address (col. 5, lines 39-43). A path that experiences a failure can be restored by configuring a different path between nodes (col. 25, lines 21-38).

Amended claim 12 is directed to a method of guaranteeing failure notification in a distributed system operating on a plurality of nodes in a network. The method comprises creating a failure notification group comprising a plurality of nodes, wherein the failure notification group has a unique identifier, associating with the unique identifier of the failure notification group a failure handling method of a distributed application running on some or all of the nodes of the failure notification group, each node in the failure notification group ascertaining whether a failure has occurred, each node in the failure notification group that has ascertained a failure signaling a failure notification to each reachable node in the failure notification group, wherein each node in the failure notification group ascertains a failure or is notified of a failure, and each node in the failure notification group executing the failure handling method to perform an application level action in response to ascertaining a failure or being notified of a failure.

Shinomiya discloses a spare path design method for a communication network, wherein a fault notification message including fault location information is transferred from a fault detection node to each node in the event of a link or a node fault. As acknowledged by the Examiner, Shinomiya does not disclose creating a failure notification group, wherein the failure notification group has a unique identifier and associating with the unique identifier of the failure notification group a failure handling method of a distributed application running on some or all of the nodes of the failure notification group. Further, Shinomiya contains no disclosure or suggestion of a method of guaranteeing failure notification, wherein each node in the failure

notification group ascertains a failure or is notified of a failure, even if some nodes are not reachable from the node that detects the fault, as required by amended claim 1.

Saleh does not provide the teachings that are lacking in Shinomiya. FIG. 14 of Saleh shows a multi-zone network, wherein a path between nodes can be restored following a failure (col. 24, lines 47-66 and col. 25, lines 21-38). However, Saleh does not disclose or suggest a method of guaranteeing failure notification, wherein each node in the failure notification group ascertains a failure or is notified of a failure, even when the node is not reachable from a node that detects the fault, and each node executes a failure handling method to perform an application level action in connection with a distributed application running on some or all of the nodes of the failure notification group. Both Shinomiya and Saleh describe failure detection by a single node of a network. This approach results in some nodes that are not reachable from the failure detecting node not being notified of the failure and potentially producing erroneous results when executing the distributed application. Further, both Shinomiya and Saleh describe responding to a failure by rerouting of communication paths. However, neither Shinomiya nor Saleh describes each node executing a failure handling method to avoid erroneous results when executing a distributed application. For at least these reasons, amended claim 1 is clearly and patentably distinguished over Shinomiya in view of Saleh, and withdrawal of the rejection is respectfully requested.

Claims 2-22 depend from claim 1 and are patentable over the cited references for at least the same reasons as claim 1.

Amended claim 23 is directed to a method of guaranteeing failure notification in a distributed system operating on a plurality of nodes in a network and contains limitations that parallel the limitations of amended claim 1. Claim 23 is patentable over Shinomiya in view of Saleh for at least the reasons discussed above in connection with claim 1.

Claims 24-39 depend from claim 23 and are patentable over the cited references for at least the same reasons as claim 23.

Based upon the above discussion, entry of the Amendment and allowance of the application are respectfully requested.

CONCLUSION

A Notice of Allowance is respectfully requested. The Examiner is requested to call the undersigned at the telephone number listed below if this communication does not place the case in condition for allowance.

If this response is not considered timely filed and if a request for an extension of time is otherwise absent, Applicant hereby requests any necessary extension of time. If there is a fee occasioned by this response, including an extension fee, the Director is hereby authorized to charge any deficiency or credit any overpayment in the fees filed, asserted to be filed or which should have been filed herewith to our Deposit Account No. 23/2825, under Docket No. M1103.70224US00.

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Respectfully submitted,

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